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PRESENT
Community
In tables
GENERAL EPIDEMIOLOGY ,
SPECIAL EPIDEMIOLOGY ,
NUTRITION &
PREVENTION OF
COMMUNICABLE DISEASES
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	Pertussis	Meningococcal meningitis	Strept pharyngitis	Diphtheria	Pulmonary TB
Causative agent	Bortadella pertussis & parapertussis through adherence – Exotoxins	Neiseria meningitides (fragile destroyed outside the body – group A-W135 → epidemic & B-C → sporadic cases	Streptococcal pyoggen – resistant outside body but destroyed by heat- boiling –disinfectants	Corynebacterium diphtheria (gravis-intermedias-mitis) – gram +ve bacilli – killed by heat & pasteurization on heart –PNS	Mycobacterium tuberculosis complex – resistant outside body but destroyed by sunshine & proper boiling
Reservoir	Human cases – no carreiers	Human cases – nasopharyngeal carreier up to 10 % in endemic – reach 80% In epidemic	Human cases & carriers (temporary –chronic & nasal – throat)	Humans cases –carriers (all types incubatory –convalsent –contact	Humans (open active case of TB)- Animals : diseased cattle to human by cough spray
Exit	Pharyngeal – bronchial secretion	Nasopharyngeal discharge	Throat & nasal discharge	Naspharyngeal discharges	Sputum human –coughspray cattle
Period of communicability	Early catarrhal and beginning of the paroxysmal – end in 3 weeks	As long as it is in pharyngeal secretions – disappear in 24 hours after proper ttt	Late incubation –all disease – variable in convalescence	Rare chronic shed for 6 months	As long as it stay in sputum it may extend for years
Modes of transmission	Direct droplet - contaminated articles and fomites	Direct droplet – indirect air borne	Direct droplet – indirect (air borne –articles) – milk	Direct droplet – indirect (air borne –articles) – milk- contact	Direct droplet – indirect (air borne –articles
IP	9-10 days	2-10 days	1-3 days	2-5 days	4-12 week 1ry lesion – 1-3 Y diseas
C/P	Atypical (no cough)- typical pass in 3 stages (catarrhal- paroxysmal – convelscence	3 stage s 1- nasopharyngitis 2- Meningococimeia: rash – neck stiffness 3- CNS affection ;delirum –coma death	Sudden onst of fever – cervical adenopathy – tonsils are enlarged with yellowish purulent spots easily removed	Toxemia – low grade fever – tonsilar affection by adherent grayish membrane bleeds on trying removsl	Night fever –night sweat –oss of weight – anorexia –couphing – expectoration dyspnea –hemoptysis
Complications	1- increased pressure in paroxysmal attacks 2- 2ry bacterial infection 3- Malnutrition & loss of weight	Disability – mental retardation cranial nerve affection –paralysis – myocarditis –purulant arthar itis	Local : peritonsillar abcess- OM – laryngitis- bronchitis Systemic : Rheumatic fever – acute glomerulonephritis in 2-3 weeks	Toxic myocarditis –toxic neuritis	Lung fibrosis
Fatality	Low in vaccinated – more in infants and young children due to bronchopneumonia –enteritis – cerebral complications	50% of untrated cases – decreased to 8-15% in early detection	Differential from other sore throat causes – Dipheteria (toxic – Adherant membrane)	5-10% of non cutaneous type	From sever hemoptysis – respiratory failure
Susceptapility	*Age* : children ↓5 / *sex* : females / *immunity* : No transplacental – 2nd attack can occur / Enviromental : higher in winter & spring	Age ; children/ sex : males / immunity : vaccination give protection for 3 years / seasonal : late winter and spring – confined groups-confined places	Children –no sex / immunity is type specific / poverty – malnutrition –overcrowding – ill ventilation are predisposing	Infant & young / both sexes / Occupation : health worker / in colder months / Maternally acquired immunity & natural immunity life long – antitoxin against systemic not colonization	Age/sex/ occupation /nutrition / genitics / race / social – enviromental factors – chronic – deblitating diseases
Prevention	General – specific : ***Active immunization*** (DPT- DPT salk - DPT with OPV& Hib &HBV& MMR – Aceelular preparation) – ***Seroprophylaxis*** (human hyperimmune serum but of low value) – ***chemoprophylaxis*** (erythromycin 14 days)	General- specific : vaccination (polysaccharide antigen capsular vaccine ACYW135 - vaccine contain group A – Quadrable vaccine – it lack group B) - chemoprophylaxis : Rifampicin 600 mg / 2/ 2 days	Generl - Specific ; chemoprophylaxis By penicillin 1200000 IU for 5 years or erythromycin in sensitive cases / vaccination : M antigen vaccine under trial	G/SP : active immunization (monovalent toxoid – Divalent DT _ trivalent DPT – Duadrable DPT salk – DPT with others) / Passive immunization (equine diphtheria antitoxin – human specific immunoglobulin) – Chemo : penicillin DOC -or erythromycin)	Vaccination by BBCG vaccine living attenuated M bovis IM in deltoid / Chemopropylaxis : INH for tuberculin +ve contact to active case – Recent converters – chronic debilitated Pts / combined vaccination –chemo
Control	***1-cases***: case finding – notification – isolation in home – Disinfection – TTT by erythromycin in proper dose 14 days – release after 1 week from chemotherapy ***2- Contacts*** : Enlistement – surveillance – immunization (boosterfor previously immunized- passive & chemo for non immunized & above 4 children ***3- Epidemic*** : searching for unreported – unrecognized cases – Accelerated immunization	***1-cases*** : ttt package + penicillin ***2-Contacts*** : their package ***3- Epidemics*** : Creful serveilllane – ventilation & prevention of overcrowding – mass immunization to confined groups – mass chemo for close contacts	***1-Cases*** : same package use oral penicillin and Benzathine penicillin ***2-Contacts*** ; Same + HE	***1-cases*** : ttt package + obligatory notification – strict isolation – Antitoxin 14 day IM/IV 20-100000 + penicillin & erythromycin 2-***Contacts*** : package + chem.+ booster for immunized & antitoxin for non immunized +segregation food hander –school personnel till 2 succsessive –ve samples	***1-Cases*** : same package + DOTs in ttt (3 anti Tb in 2-3 months then 2 only in 4-6 months & INH – riampicin –streptomycin-PZA) 2- ***contacts*** : tuberculin –ve (BCG) Tuberculin +ve (INH) + case finding program & TB survey

	Mumps	Measles	German measles	Influenza	Chichen pox
Causative agent	Mumps virus	Measles virus	Rubella virus	3 types of influenza virus : A→ epidemic & B→ Reegional spread &C→ sporadic cases	Varicella –zoster virus
Reservoir	Humans cases (1/3 cases are inapparant) –incubatory carriers	Humans clinical disease only – no subclincal or carriers	Human cases all types –children with chronic rubella syndrome CRS	Humans – swine - birds	Human cases – no carriers
Exit	Saliva of infected persons	Nasopharyngeal discharge – rash is not infective	Nasopharyngeal discharge	Respiratory discharge	Nasopharyngeal –vesicular fluid from skin lesion not crusts or scaps
Period of communicability	6 days before – 15 day after onset of disease (late IP –all course of disease)	Just before prodromal –through prodromal – the stage of rash 13 days before ,,5 days after rash	1 week before – 4 days after rash	About 1 week	1-2 days before and 5 days after appearance of vesicles – virus disappear before postulation
Modes of transmission	Direct droplet – contaminated articles – in utero infection	Direct droplet – air borne contaminated articles – in utero infection	Direct droplet – air borne contaminated articles – in utero infection- infants with CRS	Direct droplet – air borne contaminated articles	Direct droplet – contaminated articles – in utero infection
IP	2-3 weeks	10 days	3-4 weeks	1-3 days	2-3 weeks
Susceptapility	Age : 5-15 year /both sexes / life long immunity after inapparant ,clinical or active immunization	Age : preschool children 2-3 years / bothsexes / maternally acquired – life long immunity / Nutition : malnutrition –vit A deficiency / late winter and early spring	Peak at school children –adolescent / both sexes / maternally acquired – active immunity life long either by natural infection or vaccination / late winter –early spring	All ages / both sexes / type specific transient immunity – vaccination give moderate protection / cold months –illventilation & overcrowding	Peak infection at 10 years / both sexes / maternally acquired immunity – natural infection give life long immunity – infection may remain latent reoccur after many years as herpes zoster / winter
C/P	1-Prodromal : viremia –fever 2- swelling & tenderness of one or more of parotid glands subside slowly in 1-2 weeks	1-Prodromal : acute febrile onset – resp carrah – kopliks spots 2- Exanthamatous : rash first on face then limbd trunk – fade in 5 days	1-Prodromal : low grade fever – mild catarrhal –lymphadenopathy 2- Eruptive stage : Maculopapular rash within 1-2day onset of fever	Fever –heache – myalgia – catarrahal – sore throat (recovery within 7 days)	Typical –atypical-mild –moderate-sever 1- preeruptive stage : mild fever +Br 1 day 2- eruptive : rash as macule –papule –vesicle – pustule –crusts –scaps more abundant on trunk than face
Complications	Orchitis –testicular atrophy – hearing loss –pancreatitis-aseptic meningitis –unfaverable outcome of pregnancy	2ry bacterial infection (pneumonia – OM – bronchitis –gastroentritis)	1-congenital defects (congenital rubella syndrome) 2- polyartharitis – Encephalitis	2ry bacterial infection – myocarditis – CNs & liver affection in children under salicylates	1-pneumonia-encephalitis –He -2r yinfection of vesicles 2- congenital varicella syndrome
Fatality	Low	Benign disease	Low	Self limited disease	Rare only sever complicated cases
Diagnosis	c/p & detect mumps IGM & rise 4 fold in mumps IGG titer – viral isolation from throat –urine –CSF	Clinical picture –viral isolation	C/P & isolation of virus & ElISA in pregnancy DD : measles –scarlet fever	C/P & viral isolation / ELISA	C/P & viral isolation from vesicular fluid - viral antigen by PCR – rise in serum antibodies
Prevention	General –speciffic (active immunization live attenuated mumps virus either monovalent or trivalent (MMR) - seroprophylaxis : hyperimmune serum	General –specific : vaccination live attenuated measles vaccine – seroprophylaxis : immunoglobulin for children at risk HIV – malignancy	General –specific : active immunization (rubella vaccine – MMR at 18 months & premarital girls) - - Seroprophylaxxis : after exposure in early pregnancy)	General / specific :: vaccination (killed vaccine contain A& B given annually in season of influenza to chilre n & live attenuated vaccine as nasal drops –better) – chemo: amantadine –remantedine to risk groups	General –specific : vaccination (varivax live attenuated vaccine) – seroprophylaxis : VZIG for high risk contacts –susceptible neonates
Control	1-Cases : same package 2- Contacts : enlistment –exclusion for susceptible from work – immunization active or passive 3- Epidemic : immunization of susceptible at high risk	1-cases : same TTT package 2-cotacts : same package	1-cases : TTT package + prevention of exposure of non immune pregnant mothers – realase after 7 days from onset of rash 2-contacts : same package + investigation for source and channels of infection	1-cases : TTT package + good ventilation nand sunning of the place + antiviral drugs for 3-5 days 2-Contacts : same –protection by chemo not vaccine 3- Epidemic : health education + immunization or chemo	1-Cases : TTT package + antiviral drugs –release after dryness of scabs 2-Contacts : same package

	Typhoid fever	Poliomyelitis	Hepatitis A	Hepatitis B	Hepatitis C	Streptococcal FP
Causative agent	Salmonella typhi – paratyphi B-A-C – has somatic – flagellar-capsular antigens & destroyed by heat-disinffectant	Poliovirus (enterovirus) 3 antigenic types – destroyed by heat – chlorination of water – ultraviolet light	HAV – relatively resistant outside body	HBV – has 3 antigenic components each stimulate formation of specific antibody	HCV – enveloped RNA virus	Preformed thermostable enterotoxin fromm streptococcus AUreus
Reservoir	Man cases –carriers (4 types)	Man cases – carriers (all types) – no chronic carrier	Man cases- incubatry carriers –(No chronic nor persistent infection	Man cases – carriers (incubatory weeks / conval years or life long / healthy years)	Human cases – carriers	Man commonly cases – carriers (5% of population) Cattle wit h staphylococcal mastitis contaminate milk
Exit	In feces (from intestine –gall bladder) – in urine (in schistosoma patients)	Throat secretions – stool	Found in blood for few days and excreted in feces for 1-2 weeks	Blood –saliva – CSF – amniotic fluid – semen – vaginal secretion	As HBV	Through resp discharge
Period of communicability	Cases : last IP – all disease – variable in convalescence Carrier : 2 weeks	Contact & healthy → 2 weeks & cases → 6-8 weeks	4 weeks (late IP –pericteric-ecteric stages of disease)	Late IP / course of disease / convalescent till termination of carrier may be years	1 week before onset of symptoms – pass indenfentily	
Modes of transmission	Ingestion of contaminated food & water – hand to mouth infection	Droplet infection – feco oral transmission	Feco-oral transmission- rarely by blood in days of viremia	Percutaneous – infected blood transfusion –organ transplantation – sexual contact – mother to infant	Parenterly – sexual –mother to infant	Ingestion of enterotoxin contaminated food (milk – cream – cakes – pastries)
IP	8-14 days	7-14 days	4 weeks	2-3 months	2-6 weeks	2-4 hours
Susceptapility	10-30 years / cases males & carrier female s / immunity not enough / summer / lack of food sanitation	6 months -5years / males / naturally acquired immunity – artificially induced by vaccination	All ages / both sexes / infection gives life long immunity / lack of food sanitation	No age or sex / antibodies to HBsAg / occupation : medical –paramedical / patient during hospitalization	Immunity after infection is unkown	
C/P	Classical picture of step ladder fever – atypical presentation due to antimicrobial resistant strains	1-inapparant infection : 90% but gives immunity 2-manifest disease : abortive 9% - involvement 1 %	Inapparent –classic – sever fulminate / complete recovery is the rule	Onset is insidious and pericteric – icteric and posticteric similar to HAV	As HB but less sever	Abrupt onset of gastroenteritis – NVCD – No fever
Complications	Intestinal He- perforation – cholecystitis – thrombophlebitis	Paralytic polio if affect motor nerves in minority of cases → flaccc=id paralysis	Sever fulminating rapidly fatal liver failure	Persistent HBs antigenaemia – chronic carrier for years / sever liver affection – hepatocellular carcinoma		
Fatality	15-30 in untreated cases- lowered to 1-2 % with TTT	2-10 %	Rare			Nil
Diagnosis	C/P & blood culture in 1st week & Widal test in 2nd week & Stool –urine in 3rd week	Viral isolation in stool –throat – rising antibody titer	Clinical : dark coloured urine & jaundice - Lab : virus in stool – Igm - ↑ liver enzymes	Clinical : sudden onset – afebrile / Lab : detect antigens-antibodies	Antibodies to virus C	Clinical – feces –vomitus food remenants cultured to isolate organism
Prevention	General –specific : vaccination (TAB vaccine :heat killed phenol preserved vaccine TABC contain paratyphi C & typhoid oral vaccine & polysaccharide vaccine (capsular antigen)	General –specific : active : sabin poliovaccine live attenuated – oral –similar to natural infection & Salk poliovaccine : killed – injection – humoral only – not prevent infection or carrier	General –specific : Active immunization : inactivated vaccine / seroprophylaxis : house hold contacts – at risk group – travelers to endemic areas) -	General (prevention of blood infection – HE – sexual infection- screening) – specific : active → plasma derived HB vaccine – yeast recombinant HB vaccine / sero : / combined sero&vacc	General – specific : No vaccine & immunoglobin is not effective	Follow general measures of food sanitation .
Control	1-cases : TTT Package + at home if sanitary – release after 3 –ve culture of stool & urine 2- Carriers : food handlers →HE – no work in food handling & chronic gall carrier →ampicillin or cholecystectomy & urinary → surgical management 3-Contacts : SAmme package 4- Epidemic : Sanitary measure – HE – vaccination –Epidemiologic stydies	1-cases : TTT package - early finding isnot practical 2- contacts : package for susceptible children ↓5years 3- Epidemic : mass oral immunization eor children ↓5 years – epidemiologic study to trace the source & channels (Egypt reach stste of polio elimination and is awaiting for polio eradication	1-cases : ttt package sanitary disposal feces urine blood – streptomycin is DOC 2- contacts ; package 3- Epidemic ; food sanitation – seroprophylaxis – epidemiologic study	1-cases : TTT package + follow up cases 2 –contacts : enlistment – immunization – HE- examination	Cases : no specific therapy - precations with blood samples – follow up cases	

	Salmonella FP	Botulism	Bacillary dysentry	Cholera	Yellow fever	Plague
Causative agent	Nontyphoidal salmonella (salmonella typhimurium-S.enteritidis)	Exotoxin of clostridium botulinium – neurotoxin very potent	Four groups of shigella (dysentri – flexneri-boudyii-sonnei) no cross immunity	Vibrio cholera O1-O139 cause epidemic (classical – eltor) persist in water and ice – killed by heating –acidity	Yellow fever virus (flaviviride)	Plague bacillus (gram –ve by bipolar staining)
Reservoir	Rodents – cattle and swine – poultry (eggs-tissues)- man cases –carriers in feces	Animals (cattle-pigs) in intestine and exit in excreta so contaminate soil with spore	Man cases and carriers (contact –healthy – convalescent temporary rarly chronic	Man is the only sorce of infection either case or carrier (incubatory –contact – convalescent)	Mn –Mosquitoes –Monkeys – transoverian transmission (urban : Aedes egypti – forest :aedes haemagogus)	1-flea :rat flea (rat to rat –rat to man)- human flea (man to man) 2- Man : pneumonic carrier 3- animals :infected
Exit	Excreta of rats – eggs &tissues of poultry – excreta&tissues of cattle – feces of man	Exceta of animals	Feces	Stool – vomitus of cacse – stool of carriers	Blood of infected individual or mosquitoes	1-bubonic plagus : exudates of buboes 2- septicemic : blood –body fluids 3 – oneumonic : sputum
Period of communicability			Few weeks	Few days after recovery – several months incarrier – may last for years in chronic biliary infection	Late IP _ 1st 3-5 days of illness & mosquito remain infective for ever	
Modes of transmission	Ingestion of food from infected animal – food contaminated by their excreta – hand to mouth transmission	Consumption of food contain preformed exotoxin as (home preserved vegetables – packed and canned meat – packing of salted raw fish (anaerobic)	Ingestion of contaminated food – hand to mouth	Ingestion of contaminated food – hand to mouth	Bite of mosauitoe egypti or hemagogus – no direct man to man transmission	Vector borne – contact infection – air borne infection
IP	12-30 day	12-36 hours	1-7 days	Few hours -5 days	3-10 days (6 internationally)	
Susceptapility		)		All ages /both sexes / hot humid weather /type specific immunity -gastric acidity – breast feeding protective - blood group O susceptible	All ages /both sexes / forest workers / natural acquired give absolute immunity – active immunization give for 10 yars – maternally acquired	Equal age –sex / hunting –lab workers – pet owners / movement of people due to civil wrs – / no natural immn – attack :longlasting immunity
C/P	1-outbreak : gastroenteritis 2-sporadic cases : salmonelosis with bacteremia complicated with artharitis &cholecystitis	Paralysis of cranial nerves (visual disturbance – dysphagia-dysphonia –resp paralysis	Mild :unnoticed / moderate : fever –tensmus loose frequent stool ps mucus) /sever fulminate withshiga – dehydration due to exotoxin and toxemia	Profuse painless watery stool – nausea profuse vomiting – rapid dehydration –acidosis – circulatory collapse 9 hypoglycemia in children – renal failure and death)	Fever -influenza like – epistaxis – gingival bleeding – hematemsis –melena – liver – renal failure	1-bubonic : enlarged tender LN & fever systemic 2-septicemic : follow bubonic or heavy infection 3- pneumonic : either 2ry or 1ry – invariably fatal
Complications	Artharitis –cholecystitis	Repiratory failure		Dehydration RF – circul collapse	Hepatic –renal failure in 20-50 % of jaundiced cases	
Fatality	No fatality	70% or more in few days	Rare	High 50% decline to 1%		High fatality
Diagnosis	Stool –vomit cultured to isolate the organism	Collection of food remenants for culture – animal inoculation	C/P & culture of feces – serological	C/P & isolation from feces – rectal swab – the 1st case suspected to full investigations	Rising antibodies titer – viral antigen in the blood	|C/P & isolation of plague bacillus according to type – for first case in an area
Prevention	General measures	General : proper packing and canning – suspected cans to be spoiled – safe processing salted raw fish – proper preservation vegetables Specific : 2 vials of polyvalent botulism antitoxin	General for food sanitation	General –specific : vaccination (koll's vaccine – oral cholera vaccine) – Chemo : tetracycline – doxycycline) / international : WHO notification – chemo for traveler -	1-general : kill mosquito-keep away – HE 2- specific : 17 D vaccine 3 –international : valid international vaccination certificate – disinfection aircraft leave endemic – quarantine of importe monkey	1-general ; control flea before rats (elimination –killing – cleanliness) 2 –specific : active by otten's vaccine & killed vaccine – chemo : tetracycline –chloramphincol 3-international : fumgition ships – rat proof airports
Control	1-control sporadic – 2-investigation for the outbreak	1-cases ; case finding by suspected history of consumed food – polyvalent antitoxin 2- contacts : eat the same food but not manifested take serotherapy	1-cases : TTT package 2-Contacts : house hold keep food sanitation / food handler excluded from work till –ve culture 3 –Epidemic : diagnosis case – examination contacts – study of local environment – trce souce channels	1-cases : TTT package + WHO –fever hospital – disinfection heat carbolic – rehydratioh therapy 2- contacts : package 3- Epidemic : HE – safe water supply & sewage disposal – flies contro l- food sanitation – investigate situation	1-cases: ttt package+ mosquito proof area 2- contacts : package 3 –Epidemic : mass vaccination –spray all houses – control all breeding places	1-cases : package – notification Who & isolation by law & disinsection by insecticides & streptomycin 2-contacts : package +examination –strict isolation – disinsection 3- Epidemic : flea then rat control –investigate deaths – alert medical facilities – HE

	Malaria	Tetanus	AIDS	Leprosy	Rabies	Schistosomiasis
Causative agent	Plasmodium vivax-falcibrium –ovale –malaria	Clostridium tetani (G+ve anaerobic spore forming bacilli) produce powerful exotoxin (neurotoxin)	HIV (retro virus) 2 serologic types 1&2 (2 isless pathogenic) – virus invade & destroy T helper cells	Mycobacterium leperae	Rabies virus (single antigenic type) – affect salivary – CNS forming negri bodies	Schistosoma haematobium – mansoni- japonicum
Reservoir	Humans only reservoir contain gametocytes infect vector (female anopheles)	Animals –man –soil contaminated by excreta of herbiverious animals	Humans cases –carriers (chronic incubatory up to 10 years)	Man (open case with ulcerated lesions of skin)	Animals : urban (dogs-cats rats)- sylvatic (foxes- wolfes – man in saliva	Human cases only in hematobium –mansoni
Exit	Blood	Intestinal excreta	Blood –semen –vaginal –CSF – lessin salive breast urine	Nasal discharge – discharge from cutaneous ulcers	Saliva of rapid vampire bat- animal –man	
Period of communicability	Pt can can be source of mosquito infection for one to several years with insufficient tttt		From beginning of infection and last throughout life		Animal infective 3-5 days from disease –throyghout course of disease	
Modes of transmission	Bite of infectied female anopheles mosquito / tansfusion of freshly infected blood – in utero transmission	Injury by contaminated places – post operative by contaminated surgical instruments – after labour or abortion – neonatal infection	Sexual / contact of abraded skin / blood transmission by needles /organ transplantation / mother to child / no risk in routine contact & vector	Exact way of tramssion is unkown / house hold & close contact is needed / droplet infection – contact direct or indirect – transplacental	Bites of rabid animal – contact with saliva or brain tissue of animal – inhalation of aerosoled rabies virus- corneal transplantation	Contact infection through penetration of bare skin with cercaria
IP	7-30 days	3-21 days	1-15 years	1-20 years (average 4 years)	4-8 weeks depending	2-6 weeks
Susceptapility	All ages / males more exposed / black African ntural resistant vivax / low socioeconomic –agricultural socitiees –hot humid weather / no natural immunity –species specific	all ages /males /farmers & agricultural workers / agricultural communities /actively immunized mothers – active immunization 10 years – TIG transient passive – recovery → no immunity	Sexually active adolescent / homosexual / other STDs / noncircumcised males / brast feeding in HIV infected females	Children –young adults are resistant /type development depend on cell mediated immunity	Occupation : night guard – cave explorers-zoo workers- farmers / immunity : no natural immunity – acquired after active immunization	1-Agent : intermediate host available –cercaria live for 72 hours 2- Host : increase with age – males – swimming in canals – farmers 3- Enviro: rural – lack of recreation – poor socioeconomic – poor H
C/P	Fever –chills –rigors- rapidly rising temperature –profuse swearting - / reapted daily –or evry other day or every 3 days / relapses even after 5 years	Painful lmuscular contractions first at wound then jaw-neck – trunk / opithotonus position – risus sardonicus	Acute attack of mononucleosis like picture in early – stoppage of symptoms years – opportunistic infections – AIDS illness in 90% untrated – acute illness	1-lepromatous type 2- tuberculoid type 3- mixed or border line leprosy	Acute encephalomyelitis with fever – malaise – hydrophobia – Aerophobia	1-Hematobium : dysuria – frequency – hematuria – obstructive uropathy – bladder cancer 2- Mansoni :diarrhea – dysentery – hepatic fibrosis- portal HTN – colorectal cance
Complications	Anemia –splenomegaly – abortion – Falciprium (liver failure –resp distresss- pulmonary –cerbral edema)	Respiratory spam and death	Opportunistic infections – malignancies like Kaposi sarcoma & lymphoma			
Fatality	High with falcibrium	10-90 %	Invariably fatal		Invariably fatal due to resp failure	Demenstation of eggs- immunological tests – intra dermal skin test – ultrasono graphy - molecular technique
Diagnosis	Malaria parasites in thick blood film / PCR	C/P & history of injury	/p & detection of P24 antigen in Pt serum / ELISA	C/P & acid fast bacilli in discharge	C/P & flurocent rabies antibody / PCR / negri bodies	
Prevention	1-general : sanitation (breeding places – larval stages –adult mosquitoes) – HE (way of protection : bed nets – animal barrier – rellepants – clothes 2- specific : chloroquine 5mg/kg once weekly during stay and 4-6 weeks after leaving	1-Genaeal : sanitary environment –educate puplic – sterilization operating theater 2- specific : Active : monovalent vaccine TT – divalent vaccine –trivalent- quadrivalent – on 5 doses / passive : human animal IG / combined passive &active / chemo : benzathine penicillin 1200000 IU singl IM	**only general** ; sexual (HE – illegal relations) – blood (disposable syringes – intravenous addicts – test transfused blood) – mothe r (routine HIV testing mothers- TTT mothers in pregnancy – immunization HIV infected children – no brast feed) – early diagnosis & TTT – vaccine undertrial – condoms	General : HE about modes of transmission – importance of vaccination Specific : BCG vaccine protect from tuberculoid type – chemoprophylaxis by dapsone	General : stray dogs – vaccination of all pets – avoid handling of unfamiliar anim Specific : vaccination (human diploid cell vaccine & nerve tissue vaccine) // sero- prophylaxis : equine rabies immunoglobulin – human rabies immunoglobulin	1-General : community development – sanitary environment – recreation facilities – HE 2- Specific : vaccines under trial
Control	1-cases : package – mosquito proof area of isolation – choloroquine –mefloquine 2- contacts : package Malaria survey – malaritiic indices – malaria eradication	1-cases : package – hospitalization &TTT: ATIG IM in large dose – metronidazole IV – muscle relaxant – artificial resp –sedatives 2- contacts : no man to man transmission	1-cases : package –antiretroviral drugs life long – TTT opportunistic infect 2 –Contacts : listing sexual partener – no isolation – just follow up – no specific protection	1-cases : TTT package – TTT by rifampicin – dapsone –clofazimine 2- contacts : package – protection by BCG vaccine	1-cases : package – fever hospital – No quarantible measures world wide 2- control : same package	Case finding – mass TTT – reexamination – HE – snail control (clearance of canals – trapping of snails – moluscicides niclosamide – copper sulfste) Schistosoma survey

NUTRITION

	Proteins	Carbohydrate	Fats	Vitamin A	Vitamin D	Vitamin E	Vitamin K	Thiamine(B1)
Sources	1-Animals : eggs- /cheese –milk / meat muscles 2- plant : pulses beans-peas-lentils / cereals; rice flour grain / nuts	Sugar-starch / banana-dates-molasses-dried fruits / bread-cakes-macarona- sweet / fiber from plant : whole grains –beans	1-animal : full cream milk-butter –chesse-egg yolk – fatty meat 2-vegetable oils : sesame-ive-peanut/ oils corn 3- Margarine	Dietry : liver –egg yolk – whole milk – cheese –any animal fat /pigment of most veget & fruits . // Non diet : cod liver oil –fish liver oil	Dietary : sardines – salmon-liver-egg yolk / D-fortified food Non dietary : Exposure of bare skin to sunlight- ultraviolet artificial- medicines	Mainly plant orgin : asparagus-tomatos=green leavy veg tables / apples – avocado / margarine – peanut butter (coking food destruct Vit E	K1 : fresh dark green vegetables – spinach / K2 : intestinal flora / K3 : synthetic prepararions oral – parentral	All natural foods (dried yeast – non milled cearals – oil seeds –nuts –animal food)
Function	Formation of cells – formation –production of fluid movement / production of energy	Production of energy / spare proteins /prevent ketosis / sweeting of food / dietary fibers : prevent constipation-obesity –hyper cholesteriaemia –gell stones - ↓ glucose absorb - ↓ cancer	Energy / absorb of fet soluble vitamins / essential fatty acids / palatable / sense of satisfication / normal subcutaneous fat / fat support for viscera	Normal growth of helthy epithelium (antiinfection vitamin) lacrimal secretion / vision at night (visual purple formation) / antioxidant role	Aborbtion of ingested Ca & ph - ↓ excretion of ph in urine - ↑ utilization of ca-ph in the body	Antioxidant (forms barrier between target celland the free radical seeking its electrons)	Required for synthesis of prothrombin in liver but not incorporated in its molecule	Essential for carbohydrate metabolism and brain function
Requirements	Adult male : 0.8 gm/ kg – pregnant : 1gm / kg - infants : 1.5-2 gm / kg	Not fixed but must give about 60 % energy requirements	Not fixed but varies with dietry and environmental habits	5000 IU for adukts – children more than 4 years	400 Iu	30 IU for adukts – children more than 4 years		
Disturbance in intake (Deficiency)	PEM / undergrowth of school children / underweight adults / nutritional edema / impaired immune system /general weakness- early fatigue	1-excess :sugar replace important foods / dental caries / obesity / hyper Cholesterolemia – fiber ; constipation / ↓mineral absorb 2-low : combustion of fat →ketosis / combustion of Ptns →↓body wt function	Excess : obesity / atherosclerosis CHD / type 2 DM / gall bladder stones / reapted heating USFA → TFA (↑ risk of CHD / ↓ HDL / affect brain –eye / affect development &growth of infant in neonatal period	***Hyperwitaminosis A :*** anorexia –slow growt h- drying of skin – enlargement ofliver – pain in long bones- bone fragility / ***deficiency*** : ↓ immunity skin keratosis- retarded growth – xerosis – xerophthalmia- keratomalacia- night blindness	Rickets : craniotabes- enlarged metaphysical ends of long bones / chest : pigeon chest – rickety rosary – harrison sulcus / hypotonia-tetany – convulsions – chest infections	Def iciency → oxidant effect of free radical → aging manifestations	Defective coagulation and tendency for bleeding (occur in new born and impairment oof fat absorption as biliary obstruction & pancreatic dysfunction	Beri-beri (peripheral neuritis –myocsrditis – encephalopathy) due to impaired carbohydrate metabolism of pyruvic –lactic acid

	Riboflavin (B2)	Niacin	Pyidoxine (B6)	Folic acid	Cyanocobalamine B12
Sources	Animal : milk (richest source) – liver –kidny – egg // plants : leafy vegetables – whole grains –legumes / synthesized in large intestine	Meat –fish –liver –whole grain cereals are rich / animal protein foods contain tryptophan converted to niacin	Liver –meat –whole cereals – legumes are rich	Widely distributed – the richest is liver –eggs –leafy vegetables	Only in food of animal origin (liver –meat –eggs –milk) – considerable amonts stored in liver
Function	Co-enzyme in tissue oxidation & respiration	Converted to nicotinamide coenz essential for carbohydrate metabolism – normal function of skin –intestinal tract –nervous	Co-enzyme amino acid metabolism / conversion of tryptophan to niacin / clinical therapy of variety off pathological conditions	With B12 needed for development of RBCs –bone marrow / essential for synthesis of DNA	Formation of RBCs in the bone marrow / synthesis of DNA / essential for metabolism of nervous system
Requirements	1.5 mg / day	20 mg /day to be increased in pregnancy & lactation	2 mg	0.4 mg	2 µg for adult
Disturbance in intake (Deficiency)	Ariboflavinosis : Mouth : angular stomatitis – cheliosis-soreness of tonue –nasolabial seborrhea / Eye: circuincorneal vasculrization withlacrimation – photophobia irritation –sandy sensation	Pellagra : 3Ds (dementia- diarrhea – dermatitis)		Megaloblastic anemia	Pernicious anemia (anemia with nervous manifestions) due to diet of plant origin / degeneration of gatric mucosa / diphylobothrium latum

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	Ascorbic acid C	Calcium	Phosphorus	Iron	Iodine	Fluorine	Zinc	Selenium	Copper
Sources	Citrous fruit (Guava – green pepper the richest) / meat – liver –milk are poor	Milk and its products / green leafy vegetables (oxalic acid) – cereals (phytic acid) / fish as a whole with bone / drinking water	Animal : Ca rich food (milk –cheese) – Ptn rich food (egg yolk –meat) /// plants : bran of cereal grains but phytic ↓ absorp	Animal : organ meat (liver –kidney –heart) –shellfish –egg yolk- milk is poor / plant : cereals-pulses –green leafy veg & dried fruits (apricot-dates)	Sea food –sea salt / plants grown on iodine rich soil / milk –meat – water (10% iodine intake)	Drinking water (main source) / sea fish –cheese –tea are rich	Animal : meat - poultry-fish- eggs are the prime sources - / dry beans –nuts	Sea food –red meat – organ meat – whole grains	Liver –kidney – shellfish – milk is poor / dried beans – nuts –raisins
Function	Antioxidant / keep folate coenzyme intact /formation of matrix /related suorarenal cortex hormones – wound healing - ↓Hge / iron absorption / infection –stress	Bones –teeth / coagulation of blood / neuromuscular function / muscular contractility / important for many enzymes / best absorption with animal ptn diet	Formation of high energy phosphate compounds / DNA-RNA /bone –teeth / component of enzymes of cell metabolism /phospholipids /normal blood chemistry	Factores affect absorption : needs/stores / bone marrow activity / physiological processes / pathological ones / Dietary factors (type – vitamin c – gastric acidity)	Essential componenet of thyroid hormones needed for tissue metabolism – and regulation of metabolic rate	Normal mineralization of bones and formation of dental enamel	300 enzymes need it as a co factor / immune function / DNA & cell membrane / wound healing –growth / development of sex organs and bones / insulin function / component of superoxide dismutase	Antioxidant / contribute thyroid hormone metabolism	Tissue protein synthesis/ needed by antioxidant enzymes / help function of immune system – lipoprotein metabolism / hemopoitic role (absorption of iron – synthesis of Hb)
Requirements	60 mg to be increased during pregnancy	Infants : 500-600mg / aadolecent : 1000 mg / adult : 400-500 / pregnant : 1000-1200	1 gm for adult	Infants has good stores for 6 months / ales : 10 mg / females : 14 mg / pregnant : 30 mg	150 µg	0.5 -0,8 mg / liter	15 mg to be increased for children below 10 –pregnant & lactating	55-70 µg	2 mg
Disturbance in intake (Deficiency)	Scurvy : bleeding any wherein the body (gums- skin-mucous membranes – near joints –bones	Tetany (iritaablitiy – convulsions) - ↓ blood clotting – arrhythmia	Practically unkown	Iron deficiency anemia : pale skin / diminished carrying power of blod (dyspnea –palpiatation early fatigue on mild excertion -↓attention – learning / dry brittle nails flat spoon shaped	Cretinism : retardation of growth – maturation of organs – brain damage	Dental caries if decreased below 0.5 mg // if ↑ 1,5 ppm asin deep under ground water → flourosis	Retarded growth – sexual development due to plant or largely plant diet – using low extraction flour where phytate interfere with its absorption	Yet not known	Not in adults only in infants (retarded growth –mental reteardation – brittle hair –anemia)

Antioxidants:		PEM		
Members	Effect	Frms	Predisposing	Prevention
Enzymes (glutathione _catalase Superoxide dismutase) / vitamin E (Intracellular)/ vit C extracellular / Selenium / vit A / soyabeans –green tea –coffee Oninins / oils –flax seeds	atherosclerosis- CHD – prevent cancer / aging process / taken from food not supplements to be effective	- Mild : low Wt for age - Moderate marasmic kwashorkar - - sever Marasmus / kwashorker	1- General :**low socioeconomic – insanitary –illeracy -** 2- Nutritional :	3- General 4- Nutritional 5- Care of child

Malnutrition

Definition	Ecology	Types	Impact		Prevention
The state of body result from eating inadequate diet either Quantitively or Qualititivly	**1-Host factors :** socioeconomic / educational / morbidity (anorexia – impaired digestion – diarrhea –vomiting – impaired hepatic function –chronic blod loss –parasitic disease – prolonged oral antibiotics **2- Agent factors** : food production – availabilty – prices **3- Enviromental** : insanitary conditions – lack of health services – lack of nutrition programs	1-Under nutrition : quantity or quality 2- Over nutrition : exces energy → obesity / excess fat→ atherosclerosis / excess Na →HTN / excess micronutrients → side effects	**Direct :** Clinical or subclinical malnutrition diseases	**Indirect :** High infant or children morbidity / high maternal mortality / Lowered vitality of people	1-at international level : help national governments to implement prevention & control programs 2- National level : modern techniques in agriculture and fertilization 3-community level : socioeconomic – sanitary environment – infectious diseases – fortification of food 4-family level : nutritional education – breast feeding – emphazie vulnerable groups

Obesity

Definition	Etiology	Predisposing factors	Health hazards	Aassesment	prevention
Excess adipose tissue due to excess storage of fat in tissues – slow process over many years / body's ability to store fat is umlimited – adpose cells can incrdase 50 times in weight – if amount of fat to be stored exceed ability of ceels the body forms new cells	1-Behaviroal : (simple obesity) excess consumption of food 2-physical activity : sedentary life style 3-Biological factors : non modifiable : due to genetic predisoption : Metabolic disorder of fat – disorders of hypothalamus	1-Dietary factors : eat more – much sweet – nibbling – soft drinks – appetizing presentation 2- social : food is basic celebration – living lonely – home environment –emotional disturbance 3- personal :no age or sex –family susceptibility 4- socioeconomic : quantity of food –lifestyle -	1-CVS : HTN –CHD-athero 2- Metabolic :DM –menstrual irregulation 3-GIT : constipation –cholecystitis –stone formation 4- Muscular : osteoarthritis –back pain 5- Psycho disorders 6- Malignanc : colon –rectum –biliary tract – breast - impaired pulmonary function 7- increased mortality	1- Relative weight 2- 2-BMI 3- Waist circumference 4- Mid upper arm circumference 5- Triceps skin fold 6- Growth monitoring	1-breast feeding 2-avoid excess food 3- eradicate wrong belifs 4- physical activity at school 5- nutritional education 1- Health education 2- Avoid sedentary life 3- Prohibit advertisement on sweet Social mental HP

Nutrition assessment

Direct methods						Indirect methods
Anthropometric meas	Lab investigations	Clinical assessment	Dietry studies			
			Dietry surveys	National food consumptio	Food balance sheet	
1-weight for children-adults **2-height** for children-adults **3-weight for height** **4-waist circumference** **5-Midupper circumference**	**1-blood** : Hb – hematocruite- red cell count **2-serum level of** nutrients **3-plasmaproteins** **4-lipoproteins& triglycerides** **5-stols** for parasites **6-X-ray :** bone –teeth	**1-physical signs of nutritional deficiency** **2- eye** **3-skin** **4-mouth** **5-neck** **6-bones**	Done on families –groups to calculate wt of food utilized by family every day for 7 days / analyze food into nutrients / calculate share of every individual to be compared to RDA (done by Questionnaire asking)	Total food consumption of wholecountry in a given year = food produced locally + food imported – (food exported + food spoiled)then calculate food consumed per capita per day by dividing this NFC by population X 365	Show average daily per capita intake from different food items in a year IN Egypt : ➢ Cereals form good bulk of diet ➢ Intake > requirement ➢ Less meat intake ➢ Iron Ca from plants ➢ Low milk	1-relevant vital rates : low birth wt rates – infant mortality rates – child mortality rates – incidaence of diarrhea –prevalance of parasitic disease – prevalence of chronic diseases 2- Socioeconomic : family size –per capita income –illiteracy –bad habits –culture 3-Enviromental : weather –disasters – dryness-insanitation –food production-price 4-Availabilty of effective health policies

General Epidemiology

Reservoirs

MAN					ANIMALS		BOTH	SOIL	ARTHROPODS
Cases	Carrier				Zoonoses : diseases primeraly infect –spread between animals but trans to man		Animal to man or man to man as yellow fever / salmonellosis / salmonella food poisoning	Tetanus / anthrax	Aedes mosquito in yellow fever
Show manifested disease – infectious to variable period	According to state	According to period of infectivity	According to foci of infection	According to flow of organism	Stictlly zoonotic	Both animal man			
	1-incubatory 2-convalsent 3-contact 4-healthy	1-transient : all incubatory forfew days except Hav-HBV-HCV & AIDS 2-temporary: contact / convalescent of major enerica –allpoli-diphtheria almost all shigellosis/ healthy except HBV 3-chronic: incubatory of AIDS / healthy of HBV / convalescent of minor enteric-rare shigella-5-10% HBV for years or life	1-upper respiratory carriers 2-gastrointestinal carrier 3-urinary tract carrier	1-continous 2-intermittent	Brucellosis Q fever	Yellow fever - salmonella			

Exit

repiratory	saliva	vomitus	feces	Urine	skin	blood	Others
In drplets –sputum –throughmouth –nose	Mumps virus-HIV –rabies	Cholera	In smallintestine – colon –gallbladder	Typhoooid –paratyphoid	Through discharge of pyogenic organisms –skin eruption of varicella-herpes-variola/ infective conjunctivitis	Through bitting arthropods –blod transfusion –direct exposure to infected blood – inutero infection	Semen for HIV-HBV / tears for HIV / breast milk for HIV-HHBV-HCV-HCMV

Modes of transmission

Droplet		ingestion	Arthropod borne	Contact		Injection		Vertical infection		
Direct	Indirect	How does it reach food ? 1-contaminaed hand 2-houseflies 3-polluted water 4-human excreta contaminated dust 5-fresh human manure	1- Mechanical transmission on body surface 2- Biological: blood sucking 3- Vector reservoir role : transovarial ticks-relapsing fever / vector infective for relatively long time aedes	Invasion of skin & mucous membrane by pathogenic organisms		Blood transmitted	Pyogenic	1)Inutero	2)Perinatal	3-Breast
Direct inhalation of spray of reservoir / found in the same place within 6 feets	1-airborne (droplet nuclei-dust) 2-articles-fomites 3-milk			Undamaged surfaces	Injured surfaces	Viral hepatitis / syphilis – AIDS Through : Syringes or transfusion	Staphylococcal / contaminated syringes	infection : to embryo or fetus either viral spirochetal protozoal	:during birth infected birth canal	feeding : CMV /HIV /HBV /HCV
				Pyogenic infections / skin eruptions /infective conjunctivits	Animal bites / STDs /injection infections / brucellosis / contact zoonoses					

Exposed Host

Innate		Specific								
Natural barriers	Inne body defense	Natural immunity					Induced immunity			
Healthy epithelium	Blood plasma-phagocytosis	Passively acquired		Actively acquired			Actively acquired		Passively acquired	
		Maternally acquired	Breast milk	subclinical	Manifest	Persistence	Pre exposure	Post exposure	Human preparations	Animal preparation
		Temporary for 6 monnths	Anti-infection properities lower diarrhea-ARI	Unnoticed – in endemic areas as polio / carrier	Attack of infection give variable degree	Persistence of local focus for infection → immunity or reactivation	1-infants / preschool children 2-school children 3-international 4-occupational	1)Viral diseases : Rabies – measles – Variola 2)2 toxemic diseases : Diphthria Tetanus	1)Human normal IG Endemic 2)Hyper immune G glob: Actively immu or convelscent	1)antitoxin : sera in diseases of toxemia asDT / gas gangrene/ botulism 2)Antiviral : rabies

Spread of infections

endemic	hyperendemic	Epidemic	outbreak	pandemic	Enzootic	Epizootic
Diseaase constantly presents in community (sporadic cases – carriers)	Under vdeveloped communities may show more incidence of cases than common sporadic spread	-increased number of cases -cases in the same communities (feastures in common) / unkown disease appear suddenly or reappear	Localized epidemic that involve a confined group or closed	Epidemic of a particular disease that spread in between countries	Endemic spread of infectious disease in animals with potential risk of transmission to man	Epidemic spread of infectious disease in animals with potential risk of transmission to man

Surveillance

Definition	Objectives	Types	Diseases under sur	Recommended frq	Multistage definitio	Limitations
The ongoing systematic collection analysis interpretation and timely dissemination of health data to the concernied health authorities	1- Describe 2- Monitoring of health events 3- Planning – implementation-evaluation	1-passive :data generated by reporting sources without solicitation or intervation 2-Active : collection of data by regular outreach 3-special studies : cross-sectional studies or cohort surveys for prevalence of dis	Should fulfill the considerations: 1-public health importance 2-preventable measures 3-epidemic potential 4-excistance of targets of eradication or control	1-group A: require prompt public action – reported immediately by phone /fax 2-Group B : with epidemic potential weekly reported 3-Group C: reported on monthly basis	1-case definition 2-suspect case 3-probable case 4-confirmed case 5-Epidemiologically linked case 6-lab confirmed case :	1-under reporting 2-lack of representativeness 3-lack of timeness 4-inconsistency of case definition

Health care associated infections

Definition	Reservoir					Modes of transmission	forms		Prevention
	Within hospital reservoir			Outside hospita					
	Patient	personal	unkown	visitors	Unknown				
Infections occur on attending hospital or any health care facility to receive any type of medical service (preventive / curative) these infections where neither present nor incubating at time of admition of patient into health care facility	Himself or others	reservoir role / 3^{rd} person role	Environ-ment	Resev-oir role / non reserv-oir role	Enviro-nment	1-direct : resp or wound 2-indirect : articles / insanitary hospital 3-ingestion 4-Arthropod borne 5-Air borne (dust)	1-common community infection	2-particular infection according to function of hospital	1-infection control committee 2-health care providers 3-surveillance 4-enviromental sanitation 5-sterilization & Asepsis 6-chemoprophylaxis 7-Ademnistrative regulations

The specific prevention of communicable diseases

1) Vaccines & seroprophylaxis &chemoprophylaxis

	Pertussis	Diphtheria	Tetanus
Main Vaccine	DPT triple vaccine	Trivalent DPT vaccine	Monovalent tetanus toxoid
Nature	Killed pertussis & toxoid of diphtheria and tetanus	Killed pertussis & toxoid of diphtheria and tetanus	Adsorbed tetanus toxoid
Dose	3 doses 0.5 ml IM	3 doses 0.5 ml IM	0.5ml SC (1^{st} -1m→ 2^{nd} -6m→ 3^{rd} -10y→ 4^{th})
To be given to	Compulsory at Egypt : 2-4-6 months & Booster at 18 month	Compulsory at Egypt : 2-4-6 months & Booster at 18 ms	Military –police men / farmers –sewage workers /pregnant mothers
Effect	99 % for diphtheria & tetanus – 87% for pertussis for 3 years	99 % for diphtheria (prolongedbut not life long immunit)& tetanus – 87% for pertussis for 3 years	Effective for 10 years
Complications	fever & local pain / sever : convulsions – encephalopathy – irreversible brain damage	fever & local pain / sever : convulsions – encephalopathy – irreversible brain damage	
Contraindications	Over 4 years / history of epilepsy /immunocomprimised / sever reactions after 1^{st} dose	Over 4 years / history of epilepsy /immunocomprimised / sever reactions after 1^{st} dose	
Other vaccines	1-DPT salk :2 doses at 4-6 months 2-DPT with OPV-Hib-HBV-MMR 3-Acellular preparations : 1-5 antigenic components / less reaction –more effect for 5 years / expensive and not for parapertussis	1-monovalent toxoid to cocts of older chidren &adults previously immunized / those at high exposure each 10Ys 2-Divalent DT : booster after 4 years &school entry 3- DPT with OPV-Hib-HBV-MMR	1-DT&DPT&DPT salk 2- vaccination by 5 doses (1^{st} -1m→ 2^{nd} -6m→ 3^{rd} -1y→ 4^{th} -1y→ 5^{th}) give immunity for life to young females /military /occupational
Seroprophylaxis	Human hyper immune serum	Equine antitoxin | Human antitoxin	Human and animal immunoglobulin
To be given to	Susceptible contacts not immunized or partially	To susceptible immed- iately after exposure	Sever exposure and prvious immunization with toxoid
Effect	Low efficiency	Temporary 2weeks Allergy | More prot Lomger No allergy	
Chemoprophylaxis	Erythromycin 14 day	Banzathine penicillin single dose IM	Single IM injection of long acting penicillin 1,200,000 IU
To be given to	House hold & other contacts regardless immunization	susceptible contacts to kill organisms / prevent carrier	

2) Vaccination & chemo only

	Pulmonary TB	Meningococcal meningitis	influenza	Cholera
Main Vaccine	BCG vaccine	Qudrabule ACYW135 vaccine	Killed vaccine	Killed cholera vaccine
Nature	Live attenuated M.bovis give cross immunity	Polysacchirde capsular antigen vaccine ACYW135	Contain A,B currently present strains	Heat killed phenol preserved whole cell microorganism
Dose	Single intradermal 0.1 in deltoid region → papule →enlage → ulcer with crusts→ scar	0.5 ml SC	2 doses 0.5 ml IM	2 doses 0.5ml-1ml 4 weeks apart
To be given to	1-compulsory in Egypt at 3 months of age / non reactors in at risk – dangerous groups	School children at 6-9 years / susceptible adult in confined places	Children and at risk groups annually before season of influenza	People in out break – I contact
Effect	80% after 3 months and to 7-10 years	85% protection for 3 years	80 % protection from circulating strains	Only partial protection 50% for 3-6 months / not prevent carrier
Complications	Given wrongly sc causing necrosis pain lymphadenitis – rigors reactivation focus			Associated with adverse effects & give false impression to public
Contraindications	Immunosuppersion – generalized eczema – debility conditions			
Other vaccines	-Oral BCG : to newly borne in 3 doses in 1^{st} week of life -Combined vaccination & chemo	1-Vaccine contain A group taken 2 doses 3 months apart / children from 3 months – 2 years 2-vaccine A_C to adult & old children	Live attenuated vaccine given by nasal drops/ stimulate cellular and humoral immunity / better than killed vaccine	2 oral cholera vaccine : safe give protection for several months against O1 strain one is live vaccine and other is inactivated & Bsubunit of toxin
Chemoprophylaxis	INH 5-10mg /kg prevent progression of latent	Rifampicin 600 mg twice / 2 days	Antiviral drugs `: amantadine – remantadine	Tetracycline 500 mg /6hs/3 days & Doxycycline 300mg for 3days once
To be given to	1-tuberculin +ve contact to active – recent converters –chronic debilitated conditions	Susceptible contacts in outbreak – epidemic	High rsk : elderly –children –chronic debilitating	Contact – international travelers – pilgrims

3)vaccination & seroprophylaxis

	Mumps	Measles	Rubella	Chichen pox	HAV	HBV	Rabies	
Main Vaccine	Mumps vaccine	Measles vaccine	MMR	Varivax vaccine	HAV vaccine	Yeast recombinant hepatitis B vaccine	HDCV	NTV
Nature	Live attenuated mumps virus vaccine (monovalent)	Live attenuated measles virus	Live attenuated strains of mumps-measles-rubella	Live attenuated vaccine	Inactivated vaccine	HBsAg is produced by recombinant DNA in yeast cells	Strain grown on human diploid cells	Made from infected sheep &mouse brain
Dose	Single dose 0.5 ml SC	0.5ml SC single dose	Single 0.5 ml SC	0.5 ml SC single dose for children / 2 for adults	2 doses 1ml IM deltod	3 doses ml IM at 0,1,6 months	1 ml IM in deltoid region and in thigh in children	2.5-5 ml deep SC in ant abdominal wall
To be given to	compulsory at 18 months with vitamin A	Compulsory at 9 months with vit A / revaccinate at 18 months as MMR	Children at 18 month / adolescent girls – premarital females 3 months before marriage	Infants –chidren – susceptibe adults (close contact –teachers-collage students – military)	Persona of increasd risk of infection or conseque (lab worker / chronic liver disease)	Compulsory at 2,4,6 ms / medical – paramedical personnel & students / cases of reapted blood trans/ sexual partener / international traveler	1-pre exposure in 3 doses 0,7,21 &booster every 2 years 2-post exposur 5 daily doses	Only post exposure daily for 14 days and in sever extend to 23 day
Effect	95% protection wirh long lasting or life long	High protection life long	Solid immunity 95 %	70-80% for 6 years	Moderate	Highly immunogenic give antibodies in 96%	Highly effective	Less effective
Complications	Fever – parotitis or rarly orchitis			Followed in 7% by herpes zoster later in life			Safe as no allergy	Encephalitis due to allergy
Contraindications	Pregnancy – immunocompromised	Pregnancy – immunocompromised	Pregnancy – immunocompromised	Prgnacy – immunocomp				
Other vaccines	Trivalent MMR	MMR				Plasma derived cell vaccine formalin inactivated Ags from heathy carriers		
Seroprophylaxis	Hyperimmune serum	Serum immunoglobulin	Rubella vaccine	Human specific immune-globulin	Human normal immunoglobulin	Human specific immunoglobulin	Human(20 IU/kg) & equine(40 Iu/kg)immunoglobulin	
To be given to	High risk contact / cases especially adults to prevent complication	Children at special risk (HIV- Malignancy)	Human normal immunoglobulin	Within 4 days of exposure – high risk contact – susceptible neonates –deplitated childen	House hold contacts – at risk groups – travelers to endemic	Infants borne to +ve mother / persons with suspected exposure	With vaccination after sevr exposure (half dose given around and into wound by inflteration & half IM)	
Effect		Seroprevention / seroattenuation	In huge dose after exposure and early pregnancy		Before expected exposure or within few days after exposure		Netrilize virus	

4) Chemo only

	Strept pharyngitis	Malaria
Chemoprophylaxis	Penicillin is drug of choice (DOC)- long acting penicillin	Chloroquine or mefloquine in chloroquine resistant strains
Dose	1,200,000 Iu Im on 2 weeks regimens for at least 5 years Erythromycin for penicillin sensitive	5 mg /kg/once weekly
To be given to	Children exposed to reapteed infection by strept	Visitors to endemic in stay And after leaving for 4-6 weeks
Value	Guard against reapted attacks preventing denelopment of RHD	

5) *Vaccination only*

		Typhoid	Poliomylitis		Yellow fever
Main Vaccine		TAB vaccine	Sabin polli vaccine	Salk polivaccine	17 D vaccine
	Nature	Heat killed penol lpreserved vaccine	Live attenuated trivalent vaccine (3 types of polio	Trivalent killed vaccine	Live attenuated from nonvirulent 17 D strain
	Dose	2 doses 0.5-1 ml SC 4 weeks apart	3 drops orally on tongue	Variable in different countries	Single 0.5 ml SC
	To be given to	Food handlers-occupational at risk –camps- slum areas-in outbreak – travelers to endemic	Zero dose at brth - 3 doses at 2-,4,6 Ms – booster at9, 18 ms- school age / older children below 5 if not immunized before	Taken with DPT at 4,6 months	International travelers from and to endemic / people above 9 ms in infected area / occupational groups work in jungles
	Effect	moderate 50-75%	1-gives humoral & tissue immunity prevent CNS affection & carrier 2-excreted in stool 3-easy & inexpensive	Prevent more than 90% off paralytic cases bygiving humoral immunity only so doesnot prevent infection & carrier stste	99 % immunity after 10 days for 10 years
	Complications	Mild local reaction –milf=dfever –headache	Very rare paraysis due to mutation of virus		
	Contraindications		Pregnancy immune -deficient - corticosteroid		
	Other vaccines	1-typhoid oral vaccine : live aviruleant in 4 doses – 65 % In highly endemic countries 2-polysaccharide vaccine : contain Vi antigen in single dose			

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